

## WHAT IS CLAIMED IS:

1. A method of determining if a test subject is in ethanol withdrawal comprising measuring an amount of high-affinity dopamine D2 receptors in striata of the test subject.  
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2. The method according to claim 1, wherein if the amount of high-affinity dopamine D2 receptors in striata of the test subject is greater than that for a control subject, then the test subject is in ethanol withdrawal.
- 10 3. The method according to claim 1, wherein the amount of high-affinity dopamine D2 receptors is the density of the sites or states of high-affinity dopamine D2 receptors.
4. The method according to claim 1, wherein the test subject is a human suspected of being in alcohol withdrawal.  
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5. The method according to claim 2, wherein the control subject is a human which is not in alcohol withdrawal or does not suffer any other condition that would result in elevated levels of high-affinity dopamine D2 receptors.
- 20 6. The method according to claim 2, wherein if the amount of high-affinity dopamine D2 receptors in the test subject is at least about 30% more than that in the control subject then the test subject is in ethanol withdrawal.
7. A method for monitoring a test subject for susceptibility to relapse from ethanol  
25 withdrawal comprising measuring an amount of high-affinity dopamine D2 receptors in striata of the test subject.
8. The method according to claim 7, wherein if the amount of high-affinity dopamine D2 receptors in striata of the test subject is greater than that for a control  
30 subject, then the test subject is less susceptible to relapse from ethanol withdrawal.

9. The method according to claim 8, wherein if the amount of high-affinity dopamine D2 receptors in the test subject is at least about 30% more than that in the control subject then the test subject is less susceptible to relapse from ethanol withdrawal.

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10. The method according to claim 8, wherein the amount of high-affinity dopamine D2 receptors in striata of the test subject is monitored over a period of time and when said amount begins to decrease, the test subject is more susceptible to relapse from ethanol withdrawal.

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11. A method for determining the state of dopamine sensitivity of a test subject who abstains from ethanol drinking comprising measuring an amount of high-affinity dopamine D2 receptors in striata of the test subject.

15 12. The method according to claim 11, wherein if the amount of high-affinity dopamine D2 receptors in striata of the test subject is greater than that for a control subject, then the test subject is in an enhanced state of dopamine sensitivity.

13. The method according to claim 12, wherein if the amount of high-affinity dopamine D2 receptors in the test subject is at least about 30% more than that in the control subject then the test subject is in an enhanced state of dopamine sensitivity.

14. A method for reducing elevated amounts of high-affinity D2 receptors which occur upon ethanol withdrawal, which method comprises administering, to subjects in need thereof, an effective amount of a general gaseous anaesthesia.

15. A method of treating a condition associated with an elevated amount of high-affinity sites of dopamine D2 receptors comprising administering an effective amount of a general gaseous anaesthesia to subjects in need thereof.

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16. The method according to claim 15, wherein the condition is selected from one or more of craving for alcohol, relapse from ethanol withdrawal, medical illness associated with an elevated density of high-affinity dopamine D2 receptors and addiction and craving associated with amphetamine use.

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17. The method according to claim 16, wherein the medical illness associated with an elevated density of high-affinity dopamine D2 receptors is psychosis.

18. The method according to claim 17, wherein the psychosis is associated with  
10 schizophrenia and/or Alzheimer's disease.

19. The method according to claim 15, wherein the general gaseous anaesthesia is administered to the subjects more than once.

15 20. The method according to claim 15, wherein the anaesthesia is general gaseous deep surgical anaesthesia.

21. The method according to claim 20, wherein the anaesthesia is selected from one or more of isoflurane, halothane, diethyl ether, enflurane, methoxyflurane, ethyl chloride,  
20 vinyl ether, fluroxene, cyclopropane, ethylene, chloroform, trichloroethylene, high concentrations of nitrous oxide, and similar general anesthetic gaseous agents.